

**Proposed Amendments**

**Administrative Rules of South Dakota (ARSD)**

**Chapter ARSD 74:36:12**

**Control of Visible Emissions**

**October XX, 2016**

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## 1.0 Background

On June 12, 2015, the federal Environmental Protection Agency (EPA) published a final rule in the federal register issuing a State Implementation Plan (SIP) call to amend provisions in 36 states regarding excess emissions during periods of startup, shutdown, and malfunctions. EPA's State Implementation Plan call impacts the 36 states in different ways depending on how each state's rules are written. For South Dakota, EPA's State Implementation Plan call impacts the exception for visible emissions for brief periods during soot blowing, startup, shutdown, and malfunctions found in paragraph (3) of section 74:26:12:02 – Exceptions to restrictions. The EPA's State Implementation Plan call is the result of a petition for rulemaking filed by the Sierra Club.

The EPA proposed the State Implementation Plan call in the federal register on February 22, 2014. The South Dakota Department of Environment and Natural Resources submitted comments on May 10, 2013 (see Appendix A), refuting EPA's concerns that South Dakota's exception for visible emissions during soot blowing, startup, shutdown and malfunctions was justified and did not interfere with South Dakota's ability to maintain its air quality in attainment with all of the federal National Ambient Air Quality Standards. This has been true ever since the section was adopted and part of South Dakota's State Implementation Plan in 1975 or for over 31 years.

Since EPA agreed with the Sierra Club, South Dakota is required to revise its regulations to eliminate the visibility exception. In response to EPA's State Implementation Plan call, the proposed revisions to South Dakota's Air Pollution Control Program are discussed in the following chapters and may be viewed in Appendix B.

## 2.0 South Dakota's Current Opacity Limit

In 1975, South Dakota's air quality regulations were adopted and eventually submitted to EPA for approval in South Dakota's State Implementation Plan. The Air Quality Program within the South Dakota Department of Environment and Natural Resources (DENR) implements federal air quality programs. There are several methods by which the U.S. Environmental Protection Agency (EPA) gives states approval to implement federal air quality programs. The more traditional method is for states to adopt rules and submit the state rules to EPA for implementation into what is known as a State Implementation Plan (SIP). For this process, EPA reviews the state's rules to determine if the rules are equivalent to the federal regulations. If the state's rules are equivalent, EPA approves the state's rules through a federal register notice.

The Air Quality Program was unable to find the original reason why South Dakota's State Implementation Plan established opacity exemptions for soot blowing, startup, shutdown, and malfunctions. Based on experience, brief periods of soot blowing were exempt because units that are required to soot blow would not be able to meet the 20% opacity limit during soot blowing. For startup, shutdown, and malfunctions, the exemption probably was derived from EPA's own rules. In 1971, EPA established performance testing procedures in the federal New Source Performance Standards in Title 40 Code of Federal Regulation (CFR), Part 60. In 40 CFR §

60.8(c), EPA specifies that a performance test shall occur during representative performance which does not include operations during periods of startup, shutdown, and malfunctions. The performance testing section (§ 60.8) has been revised nine times since 1971. The Air Quality Program was unable to find a copy for the three that occurred in the 1970s. The other six revisions date back to February 14, 1989 with the last revision occurring in February 2014. These six revisions did not revise EPA's requirement that performance tests occur during representative performance.

The Air Quality Program contends that EPA has not revised its performance testing requirements because the limits established in the federal New Source Performance Standards, including the 20% opacity limit, were based on operations that occurred during representative performance and not soot blowing, startup, shutdown, or malfunctions.

### **3.0 Options Throughout the Nation**

DENR allowed exception to the visible emission limit for soot blowing, startup, shutdown, and malfunctions because for all practical purposes, a majority of units are unable to comply with a 20 percent opacity limit in ARSD section 74:36:12:01 during those periods. EPA understood that when it first adopted the New Source Performance Standards under 40 Code of Federal Regulations (CFR) Part 60. As DENR identified that in the May 10, 2013 comment letter, EPA still allows exceptions to the opacity limit and still does not allow testing during startup, shutdown, and malfunctions.

To determine an alternative opacity limit or procedure that is designed for periods of soot blowing, startup, shutdown, and malfunctions and does not jeopardize compliance with the opacity limit during these time frames, DENR looked at other state regulations throughout the nation and EPA's existing and recent federal regulations that deal with exceptions during these periods. DENR found that states do not have a separate limit for normal operations versus soot blowing, startup, shutdown, and malfunctions. Instead, states provide exceptions to the limit for certain time periods or other means for accounting for high opacity readings during these periods. States have a wide range of opacity limits corresponding to time periods. The following is a summary of what DENR found during its research:

1. A state has a 40 percent opacity limit and allows up to 60 percent for not more than a cumulative total of 15 minutes in a 6 hour period;
2. Several states exempt or increase an opacity limit if the unit is stack tested under similar conditions and the unit demonstrates compliance with the state's particulate limit;
3. A state has an opacity limit of 20 percent but allows a facility to adjust its opacity limit for a particular unit through testing to ensure the unit is in compliance with its particulate limit;
4. A state has a 20 percent limit but for older units, it allows one six minute period per hour of not more than 33 percent;
5. A state has an opacity limit of 40 percent but exempts incinerators;

6. A state has an opacity limit of 20 percent but does have a different limit for units subject to certain monitoring. In one case the state allowed 16-minute period per hour up to 27 percent;
7. A state opacity limit for new units is 20 percent but for existing units it is 40 percent. New units may have excess visible emissions up to 40 percent for not more than six minutes in any hour;
8. A state allows existing units up to one six minute average of not more than 60 percent per hour while new units get one six minute period of not more than 40 percent per hour;
9. Certain states also exempt units from the opacity limit if a continuous particulate matter emission monitoring system is installed or have different specifications for continuous opacity monitoring systems;
10. EPA has recently established work practice type standards during periods of startup and shutdown. Work practice examples are:
  - a. Conduct a tune up every 5 years;
  - b. Operate with a clean fuel. A clean fuel means natural gas, propane, ultralow sulfur diesel fuel, hydrogen, etc.; and
  - c. Engage all of the applicable control devices prior to beginning operations of the emission unit.
11. In a majority of the older EPA regulations, a unit is exempt from the opacity limit during startup, shutdown, and malfunctions.

### **3.0 DENR's Recommendation**

**Commented [CA1]:** Recommend changing to #4.

DENR's is considering a combination of these regulations which are listed below:

1. Since opacity is an indication of particulate emissions, opacity limits will not be applicable if the unit emits nothing but volatile organic compounds and/or hazardous air pollutants. Examples of this type of unit would be a petroleum storage tank, paint booths, etc.;
2. Establish appropriate opacity limits for continuous opacity monitoring systems;
3. Establish appropriate opacity limits to address soot blowing, startup, shutdown, and malfunctions.
4. Establish work practice standards

The revisions to the state's existing rules may be viewed in Appendix B.

**Appendix A**

**Department of Environment and Natural Resources**

**Comment Letter**

**EPA's State Implementation Plan Call**

**May 10, 2013**

**Appendix B**  
**Proposed Revisions**

## ARTICLE 74:36

### AIR POLLUTION CONTROL PROGRAM

|          |                                                           |
|----------|-----------------------------------------------------------|
| Chapter  |                                                           |
| 74:36:01 | Definitions.                                              |
| 74:36:02 | Ambient air quality.                                      |
| 74:36:03 | Air quality episodes.                                     |
| 74:36:04 | Operating permits for minor sources.                      |
| 74:36:05 | Operating permits for Part 70 sources.                    |
| 74:36:06 | Regulated air pollutant emissions.                        |
| 74:36:07 | New source performance standards.                         |
| 74:36:08 | National emission standards for hazardous air pollutants. |
| 74:36:09 | Prevention of significant deterioration.                  |
| 74:36:10 | New source review.                                        |
| 74:36:11 | Performance testing.                                      |
| 74:36:12 | Control of visible emissions.                             |
| 74:36:13 | Continuous emission monitoring systems.                   |
| 74:36:14 | Variances, Repealed.                                      |
| 74:36:15 | Open burning, Transferred or Repealed.                    |
| 74:36:16 | Acid rain program.                                        |
| 74:36:17 | Rapid City street sanding and deicing.                    |
| 74:36:18 | Regulations for state facilities in the Rapid City area.  |
| 74:36:19 | Mercury budget trading program, Repealed.                 |
| 74:36:20 | Construction permits for new sources or modifications.    |
| 74:36:21 | Regional haze program.                                    |

### CHAPTER 74:36:12

#### CONTROL OF VISIBLE EMISSIONS

|                             |                                                                                               |
|-----------------------------|-----------------------------------------------------------------------------------------------|
| Section                     |                                                                                               |
| 74:36:12:01                 | Restrictions on visible emissions.                                                            |
| 74:36:12:02                 | Exceptions to <a href="#">visible emission</a> restrictions.                                  |
| 74:36:12:03                 | Exceptions granted to alfalfa palletizes or dehydrators.                                      |
| <a href="#">74:36:12:04</a> | <a href="#">Restrictions on visible emissions during soot blowing, startup, and shutdown.</a> |
| <a href="#">74:36:12:05</a> | <a href="#">Restrictions on visible emissions during malfunctions.</a>                        |
| <a href="#">74:36:12:06</a> | <a href="#">Compliance based on continuous opacity monitoring system.</a>                     |

**74:36:12:01. Restrictions on visible emissions.** The owner or operator of a source may not discharge [visible emissions](#) into the ambient air from ~~a single an emission~~ unit ~~of emissions~~ an air pollutant of a density equal to or greater than that designated as 20 percent opacity, [except during periods of soot blowing, startup, shutdown or malfunctions. Opacity shall be determined as](#)

**Commented [CA2]:** We have a question about the enforceability of this term. Because the term "soot blowing" is not defined in your SIP, it would not be clear whether a certain event should be characterized as soot-blowing.

In addition, to make the AEL effectively enforceable, this would need to have adequate MRR for all of these periods (startup, shutdown and soot blowing). If MRR requirements are elsewhere in the SIP, you could reference them here.

**Commented [CA3]:** We recommend the following changes;

Make clear that the alternative emission limit (AEL) applies when the 20 percent limit does not. Add a reference to the AEL in 74:36:12:04 (please see our comments on 12:04 below). For instance, "... , during which periods the unit must instead meet the requirements of 74:36:12:04, below" would be sufficient.

Strike the term "malfunctions." As explained in more detail in our comments on section 12:05, below, it would be very difficult to establish a general AEL for all malfunctions, and a specific one would have to be very narrowly tailored, as explained in our final SSM SIP Call at pg 80 FR 33979.



established by the Environmental Protection Agency's Method 9 in 40 C.F.R. Part 60, Appendix A (July 1, 2014).

**Source:** SL 1975, ch 16, § 1; transferred from § 34:10:03:01, 7 SDR 4, effective July 27, 1980; transferred from § 44:10:03:01, effective July 1, 1981; 13 SDR 129, 13 SDR 141, effective July 1, 1987; 17 SDR 170, effective May 13, 1991; transferred from § 74:26:03:01, 19 SDR 157, effective April 22, 1993; 21 SDR 119, effective January 5, 1995; 25 SDR 123, effective April 4, 1999; 26 SDR 168, effective June 27, 2000; 31 SDR 101, effective January 2, 2005; 32 SDR 209, effective June 13, 2006; 36 SDR 207, effective June 28, 2010; 39 SDR 219, effective June 25, 2013; 42 SDR 52, effective October 13, 2015.

**General Authority:** SDCL 34A-1-6.

**Law Implemented:** SDCL 34A-1-6.

**74:36:12:02. Exceptions to visible emission restrictions.** The provisions of §§ 74:36:12:01, 74:36:12:03, 74:36:12:04, and 74:36:12:05 do not apply in the following circumstances:

(1) If the presence of uncombined water is the only reason for failure to meet the visible emission requirements of § 74:36:12:01, 74:36:12:03, 74:36:12:04, and 74:36:12:05;

(2) If smoke is emitted for the purpose of training or research and is approved by the department; ~~and~~

~~(3) For brief periods during soot blowing, start-up, shut-down, and malfunctions.~~

~~(3) If the emission unit emits only volatile organic compounds and/or hazardous air pollutants;~~

~~(4) If a fuel burning emission unit only burns natural gas; and~~

~~(5) If the emission unit is applicable to an opacity or particulate matter standard in chapter 74:36:07 or 74:36:08.~~

**Source:** SL 1975, ch 16, § 1; transferred from § 34:10:03:03, 7 SDR 4, effective July 27, 1980; transferred from § 44:10:03:03, effective July 1, 1981; 13 SDR 129, 13 SDR 141, effective July 1, 1987; transferred from § 74:26:03:03, 19 SDR 157, effective April 22, 1993; 39 SDR 219, effective June 25, 2013.

**General Authority:** SDCL 34A-1-6.

**Law Implemented:** SDCL 34A-1-6.

**74:36:12:03. ~~Exceptions granted to~~ Restriction on visible emissions from alfalfa palletizes pelletizers or dehydrators.** The owner or operator of a facility that pelletizes or dehydrates alfalfa, or that does both, may not discharge visible emissions into the ambient air from the pelletizer or dehydrator an air pollutant of a density equal to or no greater than 30 percent opacity, except during periods of soot blowing, startup, shutdown or malfunctions. Opacity shall be determined as established by the Environmental Protection Agency's Method 9 in 40 C.F.R. Part 60, Appendix A (July 1, 2014).

**Source:** 8 SDR 133, effective April 18, 1982; 11 SDR 151, effective May 12, 1985; 13 SDR 129, 13 SDR 141, effective July 1, 1987; 17 SDR 170, effective May 13, 1991; transferred from § 74:26:03:05, 19 SDR 157, effective April 22, 1993; 21 SDR 119, effective January 5, 1995; 31

**Commented [CA4]:** This should only apply to 74:36:12:01. Applying this provision to 74:36:12:03 would add new exceptions from the opacity limit. 74:36:12:04 is itself an AEL and therefore an exception from it is unnecessary, and we recommend 12:05 be struck for the reasons stated below.

**Commented [CA5]:** Do not recommend making changes to this provision, unless the changes remove the provision entirely. Our recent proposed FIP for the Four Corners Power Plant (see 86 FR 86911, December 2, 2016) included relevant discussion of an exemption for uncombined water.

**Commented [AC6]:** It's unclear why these provisions are necessary, because if the units subject to (3) and (4) already do not have visible emissions they should not require an exemption. To retain these provisions, we recommend including a 110(l) analysis and MRR requirements.

**Commented [AC7]:** Recommend changing this to "subject." We think this is what was meant.

This added provision would also require a 110(l) analysis, which might involve inventorying all of the sources in the state subject to NSPS and NESHAPS and demonstrating how these replacement limits are adequate to show, among other things, that they are sufficient to protect the NAAQS. We think that such an analysis would be very difficult.

**Commented [CA8]:** If you'd like to provide an AEL from the 30 percent opacity limit, you'd need to cross-reference it here. A 110(l) analysis would need to accompany the AEL.

Also recommend striking the term "malfunctions."

SDR 101, effective January 2, 2005; 32 SDR 209, effective June 13, 2006; 36 SDR 207, effective June 28, 2010; 39 SDR 219, effective June 25, 2013; 42 SDR 52, effective October 13, 2015.

**General Authority:** SDCL 34A-1-6.

**Law Implemented:** SDCL 34A-1-6.

**74:36:12:04. Restrictions on visible emissions during soot blowing, startup, and shutdown.** The owner or operator of a source shall meet at least one of the following during periods of soot blowing, startup, or shutdown:

- (1) 60 percent opacity for a single period of up to 6 minutes in any one hour period;
- (2) Burn natural gas, propane, or distillate oil with a sulfur content of 15 parts per million or less in a fuel burning unit; or
- (3) Operate a particulate matter control device.

Source:

General Authority: SDCL 34A-1-6.

Law Implemented: SDCL 34A-1-6.

**74:36:12:05. Restrictions on visible emissions during malfunctions.** The owner or operator meet one of the following during periods of a malfunction:

- (1) Meet the applicable opacity requirement in §§ 74:36:12:01 or 74:36:12:03; or
- (2) Minimize visible emissions from an emission unit during a malfunction in a manner consistent with safety and good air pollution control practices for minimizing visible emissions and work expeditiously towards resolving the malfunction or shutting the unit down. If the malfunction is not resolved within one hour, the owner or operator shall shutdown the emission unit. Determination of a malfunction, whether the owner or operator implemented safety and good air pollution control practices for minimizing visible emissions and worked expeditiously towards resolving the malfunction or shutting the unit down will be based on information available to the Secretary which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the operation.

Source:

General Authority: SDCL 34A-1-6.

Law Implemented: SDCL 34A-1-6.

**74:36:12:06 Compliance based on continuous opacity monitoring system.** The owner or operator of an emission unit subject to §§ 74:36:12:01 or 74:36:12:03 that installs and operates a continuous opacity monitoring system shall have no more than four six-minute periods exceeding the opacity limit in any one day. The percent of excess emission shall not exceed 0.8 percent of the total operating time per calendar quarter.

Source:

General Authority: SDCL 34A-1-6.

Law Implemented: SDCL 34A-1-6.

**Commented [CA9]:** For all of the AELs in 12:04, these would each require justification. (See EPA's recommended considerations for establishing an AEL in the final SSM SIP Call at 80 FR 33980). These would also all require addition of or reference to MRR requirements. They would also each require a 110(l) analysis.

For (1), we recommend adding clarifying language like "a maximum of 60... one hour period, and a maximum of 20 percent opacity for the remaining 54 minutes." Also, it is unclear how 60% was derived, but you'd need to establish that this is not uncontrolled emissions and demonstrate that. This would also require a 110(l) analysis.

**Commented [CA10]:** This is a little too generic. Recommend adding specifics as to the control device and/or source type. For instance, you could add something like "that meets the performance standards of..."

**Commented [AC11]:** We recommend striking 74:36:12:05 from the SIP revision, for the following reasons.

First, it would be very difficult to establish a general AEL for all malfunctions, and a specific one would have to be very narrowly tailored, as explained at pg 80 FR 33979. The provision in (2) is not narrowly tailored to a very specific type of malfunction

In addition, we are concerned that a general duty clause in (2) is not practically or legally enforceable, due to the vagueness of the "good air pollution control practices" standard.

Finally, (2) allows the State to unilaterally determine whether there has been a malfunction and whether the owner/operator has met the standard. This would interfere with the enforceability of the provision by EPA and citizens.

Potentially, (2) could be retained if you strike provision 1 and the reference to malfunction in 12:01 and 12:03, as we've recommended, but in that case (2) would have to be in addition to the opacity limit rather than a replacement for it. Nevertheless, our recommendation would be that this whole provision not be included in the SIP.

**Commented [CA12]:** The way this is structured creates exemptions from the otherwise applicable opacity limit, because there is no opacity standard during these six-minute periods. For this reason, we recommend striking this provision or providing an alternative limit that applies during these four six-minute periods and justifying that limit (again, see 80 FR 33980).